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REMARKS

Claims 4-7 and 11-18 are pending in this application. Claims 4, 5, 11 and 12 are independent claims. By this amendment, claims 4-7 and 11-18 are amended for clarity.

Reconsideration in view of the above amendments and following remarks is respectfully solicited.

The Claims Define Patentable Subject Matter

The Office Action makes the following rejections:

(1) claims 4-7 and 11-18 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,517,685 to Aoyama et al. (hereafter Aoyama) in view of Humphries et al. (Industrial electronics, Breton Publishers, 1983, chapter 2, page 38) (hereafter Humphries); and

(2) claims 4-7 and 11-18 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,112,070 to Katsuyama et al. (hereafter Katsuyama) in view of Humphries.

These rejections are respectfully traversed.

Applicants respectfully submit that the combination of references cited above fail to teach or suggest each and every feature as set forth in the claimed invention.

Aoyama and Humphries

The Examiner alleges that Aoyama discloses in Fig. 3 an amplifier (22) for amplifying the reception signal having passed

through the filter. (see Office Action, page 3). Applicants respectfully disagree with this allegation.

For example, applicants respectfully submit that Aoyama merely discloses that reference numeral 22 is a gain variable control unit that adjusts the amplitude of the FM signal to a predetermined level. (see Aoyama, col. 2, lines 33-39). However, Aoyama fails to disclose that the gain variable control unit 22 is an isolation amplifier, as set forth in claim 4.

Instead, Aoyama merely discloses that reference numeral 22 adjusts the amplitude of the FM signal to a predetermined level. However, Aoyama fails to disclose that the gain variable control unit 22 minimizes the effects of a following circuit on the preceding circuit. As such, Aoyama fails to categorize element 22 as an isolation amplifier that cuts off reflected waves that fall outside a pass band of the variable filter.

The Examiner merely states that this limitation is met because there is no input port from the variable BPF 23 to the amplifier 22. (see Office Action, page 3). Applicants respectfully disagree with this statement. The Examiner is merely relaying on a broad figure (Fig. 3) without any support in the disclosure itself for the alleged features. As noted above, the gain variable control unit 22 fails to be an isolation amplifier as set forth in the claims.

Furthermore, the Examiner alleges that Aoyama discloses that the cut-off frequency of the variable filter is controlled by a phase-locked loop circuit that controls a frequency of the local

oscillation signal, as set forth in claim 6. (see Office Action, page 5). Applicants also disagree with this allegation.

For example, as shown in Aoyama Fig. 3, the PLL circuit 35 fails to have an output signal going to the variable BPF (23) to control the same. Instead, the variable BPF (23) of Aoyama receives a channel selection command signal issued from a controller (not shown). (see Aoyama, col. 2, lines 39-43). As such, the controller (not shown) in Aoyama controls the variable BPF (23), not the PLL circuit (35).

However, in the claimed invention, the phase-locked loop (PLL) circuit controls both the cut-off frequency of the variable filter and the frequency of the first oscillation signal. As such, with the claimed configuration it is possible to eliminate the need to separately provide a circuit for controlling the cut-off frequency of the variable filter and the oscillation circuit. Similarly, claims 13, 15 and 17 fail to be disclosed by Aoyama.

In addition, the Examiner alleges that Aoyama discloses claim 7 because a channel selection command is inputted to the divider circuit 30, and that this connection would control the voltage at the output of the LPF (34) to alter the frequency of the local oscillation signal generated by the VCO (27). (see Office Action, page 5). However, applicants also disagree with this allegation.

For example, claim 7 recites, *inter alia*, that the cut-off frequency of the variable filter is controlled by a voltage synthesizing method. In contrast with the present invention, Aoyama fails to disclose any type of voltage synthesizing method

whereby one voltage among a plurality of predetermined voltages is selected according to which channel is to be received.

With the claimed configuration, it is possible to separately set the voltages to be supplied to the variable filter and to the first local oscillation circuit. On the other hand, Aoyama uses the same channel selection command from the controller to set the local oscillation circuit and to set the cut-off frequency of the variable BPF (23). As such, Aoyama fails to make it possible to separately set the voltages supplied to the variable filter and to the local oscillation circuit. Similarly, claims 14, 16 and 18 fail to be disclosed by Aoyama.

Furthermore, Humphries fails to make up for the deficiencies in Aoyama noted above. Humphries merely discloses ways to construct bandpass filters. However, Humphries is completely silent about variable BPFs or the control thereof.

Katsuyama and Humphries

The Examiner alleges that Katsuyama discloses an amplifier (LNA 3) for amplifying the reception signal having pass through the filter. (see Office Action, page 6). However, Katsuyama fails to disclose the low noise amplifier LNA (3) as an isolation amplifier. Katsuyama merely discloses that LNA (3) amplifies the receiving wave outputted from the receiving band-pass filter 2a by a predetermined value. (see Katsuyama, col. 5, lines 8-11).

Furthermore, Katsuyama fails to categorize LNA 3 as an isolation amplifier that cuts off reflected waves that fall outside

a pass band of the variable filter. As noted above, the LNA 3 fails to be an isolation amplifier as set forth in the claims.

Furthermore, the Examiner alleges that Katsuyama discloses the features as set forth in claim 7 because the PLL circuit 9 is controlled by the CPU. (see Office Action, page 8). Applicants respectfully disagree with this allegation.

For example, claim 7 recites, *inter alia*, that the cut-off frequency of the variable filter is controlled by a voltage synthesizing method.

In contrast with the present invention, Katsuyama fails to disclose any type of voltage synthesizing method whereby one voltage among a plurality of predetermined voltages is selected according to which channel is to be received.

With the claimed configuration, it is possible to separately set the voltages to be supplied to the variable filter and to the first local oscillation circuit.

On the other hand, Katsuyama uses the same signal from the PLL to set both the local oscillation circuit (8) and to set the cut-off frequency of the variable BPF (4). As such, Katsuyama fails to make it possible to separately set the voltages supplied to the variable filter and to the local oscillation circuit. Similarly, claims 14, 16 and 18 fail to be disclosed by Katsuyama.

Furthermore, Humphries fails to make up for the deficiencies in Katsuyama noted above. Humphries merely discloses ways to construct bandpass filters. However, Humphries is completely

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silent about isolation amplifiers and variable BPFs and the control thereof.

To establish a *prima facie* case of Obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 706.02(j).

Applicants respectfully submit that independent claims 4, 5, 11 and 12 are allowable over the cited combination of references for at least the reasons noted above.

As for each of the dependent claims not particularly discussed above, these claims are also allowable for at least the reasons set forth above regarding their corresponding independent claims, and/or for the further features claimed therein.

Accordingly, withdrawal of the rejection of claims 4-7 and 11-18 under 35 U.S.C. §103(a) is respectfully requested.

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Conclusion

In view of the foregoing, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Carolyn T. Baumgardner (Reg. No. 41,345) at (703) 205-8000 to schedule a Personal Interview.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment from or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17; particularly, the extension of time fees.

Respectfully submitted,

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